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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/161,699	09/29/1998	KOICHI KIMURA	Q49742	7949

7590 12/28/2001

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EXAMINER
LANEAU, RONALD

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 12/28/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

PRG

Office Action Summary	Application No. 09/161,699	Applicant(s) KIMURA, KOICHI	
	Examiner Ronald Laneau	Art Unit 2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-6 and 8-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6 and 8-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Response to Amendment

1. The amendment filed on .10/05/01 has been entered. Claims 2-6 and 8-27 are still pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 2-4, 8-10, 12, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakai (US 6,072,454).

Nakai et al disclose a two-dimensional active matrix type light modulation device comprising a plurality of pixel electrodes arranged in the form of a two-dimensional matrix (106); a plurality of counter electrodes (106), a plurality of light modulating layers (106) interposed between the pixel electrodes and the counter electrodes and a drive circuit (101, 104, 105) constituted by ferroelectric gate field-effect transistors 104 and 105 connected to pixel

electrodes wherein the drive circuit writes data to the ferroelectric gate field-effect transistors in order of a row (102; col. 14, lines 29-38).

In claims 2, 4, 10, and 12, as to limitation "first and second polarization state", Nakai et al teach that the switching of the ferroelectric gate field-effect transistors for writing data in accordance with the input data is changed with the polarization state of the ferroelectric gate FET (see col. 4, lines 56-60; col. 5, lines 28-34; col. 10, lines 59-62; col. 12, lines 63-67).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5, 6, 11, 13, 14, and 16-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakai et al (US 6,072,454) in view of Okumura et al (US 6,115,018).

Nakai et al is discussed above. Okumura et al is cited to show that the concept of broadly utilizing a drive circuit consisting of a single TFT transistor (14) connected to a pixel electrode wherein the drive circuit performs row selection with a gate electrode of the transistor and writes data with a source electrode and drain electrode of the transistor is old (see fig. 1). Thus, it would have been obvious to one of ordinary skill in the art to modify the system of Nakai et al such that to only utilize a single ferroelectric gate field-effect transistor 9104 and 105) wherein the drive circuit performs row selection with a gate electrode and writes data with a source electrode and drain electrode of the transistor (104 or 105), as evidenced by Okumura et al,

because both references are directed to tw0-dimensional active matrix type light modulation device.

As to claims 6 and 14, relative to the limitation "modulation by binary static drive", while Nakai et al do not explicitly specify "modulation by binary static drive" in their disclosure, but it is noted that their system is capable of performing gradation or halftoning for providing a multi-gradation display (col. 21, lines 28-30; col. 23, lines 47-54). Therefore, it would have been obvious to one of ordinary skill in the art to modify the system of Nakai et al such that the drive circuit performs modulation by binary static drive because "binary static drive" is considered to be an alternative equivalent driving technique for providing a multi-gradation display device.

Response to Arguments

6. Applicant's arguments filed on10/5/01 have been fully considered but they are not persuasive.

Applicant argues that Nakai et al do not teach a drive circuit that writes data to a field-effect transistor in order of a row. Contrary to applicant's arguments, the drive circuit taught by Nakai et al is capable of driving a circuit as claimed. Further, applicant argues that the drive circuit of the present invention changes a ferroelectric gate of a field-effect transistor to write data based on input data. Contrary to applicant's arguments, Nakai et al do teach changes in polarization whether that change is in the drain voltage as claimed by applicant but Nakai et al is certainly capable of changing a gate characteristic that effects a polarization change. Therefore, the rejection finally stands.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6.00 PM or via email: ronald.laneau@uspto.gov.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

8. **Any response to this final action should be mailed to:**

BOX AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ronald Laneau
Examiner
Art Unit 2674

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

rl
December 22, 2001